Massachusetts Natural Heritage Program

Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
Route 135
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MASSACHUSETTS RARE AND ENDANGERED PLANTS

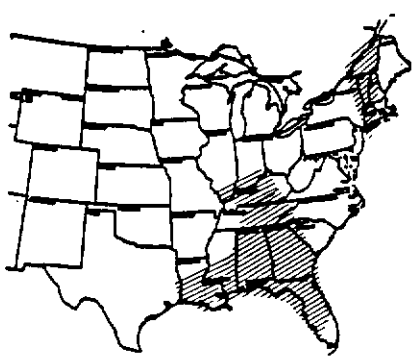
Devil's Bit
Chamaelirium luteum

Description

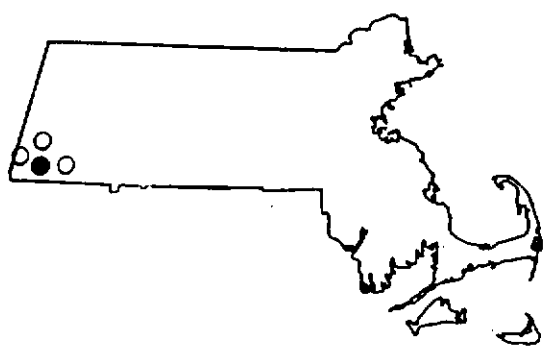
Devil's Bit is a perennial herb of the lily family. Each plant produces a slender flower stalk from a basal rosette of spatulate-shaped green to pale-green leaves which arise from a thick, bitter tasting tuberous root. The plant is dioecious; bearing the pistilate (female) and stamenate (male) flowers on separate plants. Male flower stalks grow up to a foot tall with a delicate raceme of small (1/8 inch) creamy-white flowers nodding over at the top. The tiny stamens are yellow. Female flowers are up to two feet taller, straighter, and far less less showy than the male flowers. All flowers have three petals and three sepals. Leaves on the flowering stalks are smaller and narrower and stop short of the raceme. The flowering season In Massachusetts occurs in late June and July. However, Massachusetts' plants rarely flower so the rosette which grows flat on the ground is our only clue to its presence. This plant's genus name is somewhat misleading as it was named from an immature, nonflowering specimen. It comes from the Greek *chaimi*, ground, and *leiron*, lily. *Luteum* refers to the yellow or creamy color that the male flowers appear to have towards the end of their flowering period until they dry out altogether. Fertilized female stalks (i.e. those that have developed seeds) often persist through the winter and into the following season.

An Illustrated Flora of the U.S. and Canada. Vol. I. p.489. Britton and Brown. 1970.

(continued overleaf)



Distribution



● Verified since 1978
○ Reported prior to 1978

Distribution in Massachusetts by Town

1988

Similar Species in Massachusetts

Chamaelirium is a monotypic genus (having only one species). However, the rosettes of other plants can be mistaken for Chamaelirium luteum. The rosette of Clintonia borealis is similar to C. lututeum. Both species are in the lily family, have parallel venation of their leaves, and can by found in acid woods. However, the leaves of Clintonia borealis are generally thicker, wider, shinier, and darker green in color than those of C. luteum. Also, C. borealis is more often found inhabiting cold moist woodlands.

Habitat in Massachusetts

In the southern United States, Devil's-bit is often found in mesic woods on well-drained slopes. In Massachusetts, one verified occurrence of the plant is found in young, shrubby, acidic woods with many small, shallow depressions that may formerly have been farmland which is now in the process of being reclaimed by forest. The Devil's-bit is found under a canopy of Chestnut Oak (Quercus montana), Red Maple (Acer rubrum), Hemlock (Tsuga canadensis), and White Pine (Pinus strobus). The understory is made up of Mountain Laurel and Birch and Beech seedlings. Devil's-bit shares the forest floor with clubmosses (Lycopodium), Shinleaf (Pyrola elliptica), Canada Mayflower (Maianthemum canadensis) and others. A second verified site is atop a dry limestone ledge under Sugar Maple (Acer saccharum), White Ash (Fraxinus americana), Hop Hornbeam (Ostrya virginiana), and White Birch (Betula papyrifera).

Range

Devil's-bit ranges from southwestern Massachusetts to southernmost Ontario, southern Indiana, and southern Illinois, south to central Florida and eastern Louisiana. The species has declined greatly in the last 50 years throughout the northern portion of its range. The distribution of Devil's-bit was historically much wider in the Northeast than it is presently. It is not found in Maine, New Hampshire, or Vermont. Remaining populations occur in or near the Taconic Mountains where the borders of New York, Massachusetts, and Connecticut meet.

Population Status

Chamaelirium luteum is listed as "Endangered" by the Massachusetts Division of Fisheries and Wildlife. There are only two populations currently known to occur in Massachusetts which are composed of less than 40 plants. None of these have flowered in the past several years. As it is capable of tolerating a fairly wide pH range and can survive in a variety of habitats it is unknown precisely why this species in so uncommon in the state. It is probable that as this plant is dioecious and doesn't flower every year it may be naturally incapable of rapid reproduction. Some tubers in one Massachusetts' site appear to be undergoing vegetative reproduction (i.e. producing more than one rosette) in order to survive. More (but not full) sunlight and good drainage may allow the plants to flower more often.